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Mind the Covid-19 crisis: An evidence-based implementation of *Next Generation EU*

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Abstract

This paper develops an evidence-based approach to the selection and prioritisation of Next Generation EU (NGEU) projects for timely implementation and impact of the Recovery Plan for Europe. The analysis of a large sample of projects, currently funded by the European Union (EU) with the same priorities and objectives of NGEU, suggests that a timely implementation should be driven – within the EU Commission coordination framework – by national governments liaising directly with their citizens through participatory procedures, involving relevant stakeholders. Simplified implementation procedures with clear spatial targeting and limited involvement of regional authorities are necessary conditions for the avoidance of implementation delays.

Keywords: Recovery Fund; Next generation EU; Covid-19; European Union; Cohesion Policy

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"It is essential that the Next Generation EU funds are disbursed quickly and used to support structural reforms and growth-enhancing investment projects. This would boost potential growth and contribute to reaching the EU's objectives in the areas of climate change and digitalisation."

Christine Lagarde, President of the ECB, at the plenary session of the European Parliament to debate on the ECB Annual Report, Brussels, 8 February 2021.[1]

1. Introduction

The stability and prosperity of the European Union (EU) hinges on its ability to provide timely and effective measures to repair the damage caused by Covid-19 and prepare a better future for coming generations. Having endured the Eurozone crisis and the Great Recession, the EU is now facing the most dramatic economic crisis in its history. Covid-19, and the consequent necessary public health restrictions, has had far-reaching consequences for all Member States (MSs). These states are now looking to the EU to provide coordinated answers and solutions to their citizens' plight. However, the unprecedented socio-economic challenges, coupled with diverging views on the definition and use of recovery resources, risk further exacerbating pre-existing discontent across the EU. The EU has been widely criticised in the past for its inability to act in the common interest of its MSs, or to promptly provide answers to MSs' problems that are commensurate with their scale and urgency. The existence of a European value-added has been increasingly questioned by the rise of nationalistic movements and Euroscepticism – crystallised with the Brexit vote – and the growing resentment in left-behind places (Crescenzi, Di Cataldo, & Giua, 2020; Rodríguez-Pose, 2018).

The hugely critical media coverage on, and public resentment of, the slow roll out of the Covid-19 vaccination campaign in the EU vis-à-vis the United Kingdom, the USA and Israel has made apparent how critical timing is for citizens and voters. Therefore, the value-added of EU membership is increasingly assessed on the backdrop of timeliness and effectiveness of public choices.

The use of common resources to foster recovery in all MSs offers a unique opportunity to reinforce cohesion, resilience, and transformation in the EU. As posited by the European Commission, 'relaunching the economy does not mean going back to the status quo before the crisis, but bouncing forward. We must repair the short-term damage from the crisis in a way that also invests in our long-term future' (European Commission, 2020a). After a long period of growing Euroscepticism, the pandemic seems to have facilitated the identification of a common ground in which actions can be put in place to facilitate an inclusive economic recovery. However, also in this area of the public policy response to Covid-19, time is of the essence for impact as well as public support.

On 21 July 2020, as a result of lengthy negotiations, European leaders finally agreed on an ambitious, wide-ranging recovery package for the EU economy which will boost the EU budget with immediate effect. The recovery package leverages a common pool of financial resources, to be financed by borrowing funds from financial markets on behalf of the Union, known as Eurobonds. These resources will finance the EU's response to the social and economic consequences of Covid-19 through Next Generation EU[2] (NGEU), with a total of 750 billion euro dedicated to

[1] https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp210208~296c27d246.en.html.

[2] NGEU is composed of the following individual programmes: Recovery and Resilience Facility (RRF) (672.5 billion, of which 360 billion is in the form of loans, and 312.5 billion is provided via grants); ReactEU (47.5 billion) Horizon Europe

supporting MSs via new investments and reforms, kick-starting the EU economy by incentivising private investment, and addressing the lessons learned from the crisis (European Commission, 2020b). Combined with the forthcoming 2021–2027 budget, NGEU will transfer more than 1.85 trillion euro to the hardest hit territories of the Union (European Commission, 2020c).

However, this opportunity to re-launch the process of European Integration and make the benefits of supra-national unity and coordination apparent to EU citizens is coupled with significant risks. If efforts to foster an inclusive recovery prove untimely or ineffective, Euroscepticism will be the natural answer for dissatisfied EU citizens. Therefore, a key question for EU policy making is: which difficulties might hamper or delay the implementation of NGEU? How can they be mitigated ex-ante?

This paper aims to address these questions through an evidence-based approach to policy design and implementation. The paper develops a new conceptual and empirical framework to inform and guide the selection of recovery projects which have the highest likelihood of contributing to the success of NGEU. In particular, the paper looks at EU Cohesion Policy as a laboratory to explore what type of actions and projects, in principle, might be able to trigger the quickest response to Covid-19. Since the 1980s, the EU's Cohesion Policy mobilises over 300 billion euros in seven-year budget cycles and its objectives and tools are very similar to those outlined in NGEU. From its very inception NGEU has been associated with the EU Cohesion Policy in the public discourse, and the very first recovery actions promoted by the Commission have already been deployed under the regulatory and financial framework of Cohesion Policy in March 2020 (Coronavirus Dashboard, European Commission, 2020d). By leveraging unique administrative data on all individual projects funded by the EU Cohesion Policy for the 2014−2020 programming period in Italy,[3] the paper: (i) identifies among all funded projects those that more closely resemble the objectives, functions and nature of future NGEU interventions; (ii) uncover the characteristics of these projects systematically associated with timely implementation. This makes it possible to 'predict' what types of projects – based on recent practical experience – are more likely to offer timely and concrete results while serving the new overarching objectives of the EU recovery plan.

Given the extraordinary challenges experienced by the EU economies, and the magnitude of the financial response being mobilised, policy makers at both the EU and national level are faced with the choice of what actions and tools to mobilise in order to produce timely positive impacts on growth and employment within the operational framework set out by the Commission. Various forces are at play in an attempt to guide this process. On the one hand, policy makers are looking for existing projects that were given low priority in 'normal times' and that could now be funded thanks to the substantial resources made available. However, this would favour the implementation of 'marginal' projects, not necessarily of those with the highest likelihood of timely execution and impact. On the other hand, specific interest groups and/or party politics might drive the selection of projects to be funded with the new resources. However, this might not benefit new and emerging groups whose needs have been exacerbated by Covid-19, and who may lack the experience or resources (including human and cultural) required to lobby for EU funds.

Understanding, in a timely manner, how to make the most effective and impactful use of recovery funds is therefore of crucial importance for the future of Europe. Various trade-offs between specific targets and optimal achievements will need to be taken into account in the

(5 billion); InvestEU (5.6 billion); Rural Development (7.5 billion); Just Transition Fund (JTF) (10 billion); RescEU (1.9 billion).

[3] The data are made available in the portal www.opencoesione.gov.it by the OpenCoesione governmental initatitive.

evalution of this unprecedent initiative with special reference to sustainability, inclusiveness, and the more profound restructuring of the EU economic and policy paradigm. The analysis of these aspects is crucially important but remains far beyond the aims of this paper. On the contrary the paper aims to contribute to the ongoing debate by addressing a single very specific driver of the possible success (or failure) of NGEU: the timeline of its implementation. If timely implementation is not a sufficient condition for a successful intervention, time delays will certainly be part of any assessment of the initiative that researchers and citizens will be pursuing in the future. The focus of the empirical analysis on one single country (Italy) is also a limitation of this paper and is mostly driven by the lack of equally detailed project-level data in the public domain for other MSs. However, Italy with its well-known internal heterogeneity in terms of economic conditions, institutional quality and administrative capacity (Papagni, Lepore, Felice, Baraldi, & Alfano, 2020) offers insights that could be applicable to virtually all other MSs with similar problems of slow absorbtion of EU funds and implementation delays.

Empirical results are convergent in calling for a radical simplification of implementation procedures for recovery measures, a minimisation of transaction and administrative costs and strong leadership based on the direct connection between national governments and their citizens and stakeholders within the overarching objectives set by the Commission.

The results suggest that, for the areas of intervention selected by NGEU, additional intermediate governance layers – e.g. regional governments and their agencies – account for a significant share of total implementation delays. Conversely, the role of individual stakeholders and their empowerment is crucial for success. Given their capacity to facilitate the dynamic alignment between firm/stakeholder strategies and public policy objectives, negotiated participatory selection procedures for the projects to be funded are shown to be the most time-effective approach.

Overall this paper makes a three-fold innovative contribution to ongoing scholarly and policy debates. First it brings into the policy evalutation literature concepts and ideas from project management (Lavagnon, Söderlund, Munro, & Landoni, 2020) with reference to the timeliness of project implementation as an early indicator of impact. Second, it develops a new empirical approach for the analysis of economic development and recovery projects, combining textual analysis with regression analysis at the project-level. Third, it offers new evidence to inform public policies targeting recovery from the economic impacts of Covid-19, offering a practical operational profile for the implementation of NGEU projects.

2. The European Union's response to the Covid-19 crisis

The Covid-19 pandemic has tested the ability of supranational and national institutions in providing timely and flexible responses to unprecedent economic challenges. While the impacts of the pandemic have differed widely across MSs, the EU GDP is forecasted to contract by about 7.5% in 2020 before showing a modest recovery in 2021 with 4% growth (European Commission, 2020e).

With NGEU, the EU aims to demonstrate its capacity to provide a swift and ambitious policy response to the crisis by financing urgent investments, creating jobs, and repairing the immediate damage caused by the pandemic, thus triggering a sustainable and resilient recovery.

On 9 October 2020 MS ambassadors formally agreed on the Council's position regarding the financial endowment of NGEU, the Resilience and Recovery Facility (RFF), mobilising 672.5 billion euros (European Commission, 2020f) from 1 January 2021.

NGEU investments must align with EU priorities of green and digital transition (European Commission, 2020g), which have been identified as central to Europe's future prosperity and

resilience by the European Green Deal (European Commission, 2019) and in the 'Shaping Europe's digital future' plan (European Commission, 2020h). Due to its potential for growth and job creation, the green and digital transition is now considered more important than ever (Unsworth, Andres, Cecchinato, Mealy, Taylor, & Valero, 2020).

These principles should guide the 'Recovery and Resilience Plans' that MSs will submit by April 2021, in order to receive a portion of NGEU funds.[4] MSs are expected to autonomously allocate NGEU funds, by operationalising the climate, environmental, social and digital priorities of the Union into concrete projects. In their 'Recovery and Resilience Plans' MSs should clarify how they will address the general objectives set by NGEU: 1. Promoting the Union's economic, social and territorial cohesion; 2. Strengthening economic and social resilience; 3. Mitigating the social and economic impact of the crisis; 4. Supporting green and digital transitions (European Commission, 2020g).

Having set a clear overarching framework with distinctive and measurable common objectives, the Commission has encouraged MSs to submit their plans as a result of a broad internal policy consultation involving all relevant domestic and local stakeholders. This consultative process is not fundamentally different from the well-established participatory approach that has guided the implementation of EU Cohesion Policy since the Barca Report in 2009. However, some MSs have still experienced significant difficulties, confirming long-lasting weakness in developing a shared internal consensus to feedback into the Commission decision in a timely manner.

These difficulties (and the associated delays) at the design stage of the policy are also not dissimilar – in terms of their underlying political and administrative determinants – to the problems that have hampered Cohesion Policy interventions. This reflects the fundamental congruence between Cohesion Policy and NGEU in terms of rationale, governance and the temporal perspective (see Crescenzi & Giua, 2017 for a review).

Accounting for one-third of the EU budget, Cohesion Policy represents, since the very beginning of the EU's history, one of the most important 'battlefields' where the European Commission and MSs have challenged one another (Crescenzi, Fratesi & Monastiriotis, 2020). By embracing an integrated and multidimensional approach to regional development, investments financed by Cohesion Policy promote projects to support economic growth, sustainable development, foster innovation and business competitiveness, protect citizens and improve their quality of life. During the 2014−2020 period the European Structural and Investment Funds (ESIF) financed projects taking place across the European Union to the tune of 355 billion euros.

During the latest programming period in particular, Cohesion Policy has already been pursuing those priorities that have taken centre stage in NGEU. In the 2014−2020 period, it aimed to close the digital divide by supporting projects to improve broadband connectivity and access, create a digital society and economy (e.g., digital solutions in public utility); digitise businesses and SMEs (e.g., Digital Innovation Hub) and develop innovative digital technologies (e.g., ICT technologies). Projects in this period also sought to make progress toward the zero-pollution ambition, mobilising industry toward a clean and circular economy, supporting resource efficiency and investments in biodiversity, nature and green infrastructure and mobility.

[4] In order to benefit from the RRF, MSs need to provide reforms and public investments that are implemented by 2026. 70% of resources can be used between 2021−2022, and the remaining portion by 2023 (additional loans will be available until the end of 2023 to finance further investments and reforms). In particular, the allocation criterion for the years 2021−2022 would take into account the population, inverse of per capita GDP and unemployment rate over the past 5 years of each MS; whereas for 2023, the percentage fall in real GDP in 2020 and the aggregate percentage change in real GDP over the period 2020−2021 will replace the unemployment measure.

The consolidated role played by Cohesion Policy on these grounds is reflected in the strategic decisions of the European Commission during the first stages of its Covid-19 response design. The very first action undertaken was to use unspent 2014−2020 Cohesion Policy resources to finance, within its existing legal and procedural framework, the Coronavirus Response Initiative (CRI). The CRI was then reinforced with the Coronavirus Response Investment Initiative Plus (CRII+), and successively integrated with the REACT-EU Package (Recovery Assistance for Cohesion and the Territories of Europe). As such, Cohesion Policy continues to 'make Member State economies more resilient and sustainable in the crisis repair stage, by opening up for green, digital and growth-enhancing investments, bridging the gap between the current and next long-term EU budget' (European Commission, 2020i). This has reinforced Cohesion Policy's action in the realms of firms' liquidity and investments, digitalisation and health care. The EU Commission reports that the volume of Cohesion Policy resources mobilised amounts to 6.3 billion euro for health-related projects, 8.5 billion euro for business support and 2.7 billion euro in direct support for people, including workers and vulnerable groups (Coronavirus Dashboard, European Commission, 2020d).

These principles, in line with the traditional long-term Multiannual Financial Framework that has shaped EU financial policy since 1988 and those introduced by the EU Green Deal debate, have shaped the broader recovery strategy of the European Union epitomised by NGEU.

For all these reasons, Cohesion Policy offers an ideal (and the only possible) testbed for the ex-ante analysis of NGEU. Key project-level features that characterised the implementation of Cohesion Policy can anticipate opportunities and threats for the implementation of NGEU. In particular, a key predictor for successful implementation and a necessary (though insufficient) condition for impact, is a timely completion of the projects designed and funded by the policy. Time is of the essence for all public policies, but it is of special importance to a recovery initiative. In addition, a timely project implementation is easy to measure (by comparing expected and actual project timelines) and comparable across heterogeneous expenditure categories.

What policy features influence the implementation timeline? A wide and consolidated literature on Cohesion Policy suggests that structure and quality of governance shape implementation and its timeliness (e.g. Becker, Egger, & von Ehrlich, 2013). A 'multi-level-governance' approach – that Cohesion Policy and NGEU have in common – means that the policy is operationalised through the involvement of a multiplicity of actors, forming a multidimensional multi-layered structure. In the case of Cohesion Policy every seven years the EU plans the financial headings within the multiannual financial framework and negotiates financial allocations with the different MSs (1). Then, each MS is tasked with designing the internal distribution of these funds (possibly contributing additional resources from their national finances) and with the identification of the priorities for its own domestic economy (2). In so doing, EU representatives and all national and regional bodies are involved in the so-called Partnership Agreement (3). When resources are internally distributed, central and regional authorities of each MS (e.g., government departments and regional offices) produce their Operational Programs (OP), which associate financial resources with broad objectives within national and regional contexts (4). This procedure is replicated for each Fund involved in the policy: in Italy, during the 2014−2020 period, more than 60 Operational Programs were produced (and roughly 50 of them are regional). These Programs do not yet represent policy 'practice'. Conversely, they constitute the space in which 'activation procedures' are then progressively opened (5). These activation procedures (e.g., open calls, tenders, direct assignments) are the bridge to the 'demand' side of the policy. People, firms, public bodies, private companies, schools, hospitals, transportation companies and all other stakeholders can become beneficiaries of specific projects mobilised by each activation procedure (6). These projects can be

considered the policy 'practice', i.e., the policy on the ground (7). They can involve single or multiple actors, with similar or different legal and economic characteristics. Additionally, projects' locations can involve different administrative areas (one or more municipalities, belonging to one or more provinces/regions). The coordination within this structure needs to be guaranteed both vertically (EU vs. MSs; National vs. Regional Authorities responsible for the Operational Programme or responsible for the activation procedure; the Project's Beneficiaries) and horizontally (different EU Institutions; 27 MSs; Bodies responsible for of the different activation procedures of the same Operational Programme; the Project's different beneficiaries and administrative locations). NGEU is currently undergoing the second step of the multi-level-governance structure outlined above, with MSs currently implementing EU guidelines with the allocation of financial resources to specific projects.

Each layer of the multi-level governance framework – that NGEU and Cohesion Policy have in common – shapes the implementation of the policy and its timeline. Certain steps can make it easy to form a consensus and make effective decisions, while other steps might form bottlenecks and barriers. The economic literature has extensively investigated the key potential weaknesses associated with each layer/stage of this framework, offering relevant guidance for the specification of an empirical model aimed at the practical identification of the key criticalities that NGEU is likely to face based on the decennial experience of Cohesion Policy.

In particular, when looking at the structure outlined above, it is possible to identify four key dimensions shaping a variety of implementation outcomes including timing: 1. Governance levels involved in project design; 2. Project leadership; 3. Administrative complexity; 4. Selection of beneficiaries/activation procedure. The diverse combinations of these features shape – *ceteris paribus* – the implementation of the projects and, as a consequence, the extent and the degree to which a policy will be transformed into actual operations and actions in the 'real' economy and thus produce its impacts.

First, the g*overnance levels involved in project design* are linked with the initial implementation stages outlined above. Projects can be completely 'national' with no involvement of the EU or regional government, or they can be part of the EU framework with the exclusive involvement of national authorities or, as an alternative, they might involve all three layers with the involvement of EU, national and regional authorities. The involvement of multiple layers of governance, particularly in a context of weak administrative capacity in some MSs (and their regions), might add complexity from the very beginning of the implementation process. The EU's investments to tackle this problem, such as investing in 'capacity building', have been substantial but have produced mixed results (Ferry & Polverari, 2018). Significant heterogeneity characterises the capability of MSs to invest under EU accounting rules and procedures (e.g. in terms of timeline with the N + 3 rule). In particular, lower expenditure capacities have been recorded for EU financial resources strictly connected to the EU agenda for recovery (Bachtler, Mendez, & Wishlade, 2020), suggesting that EU expenditure might be more demanding and more time-consuming vs. national expenditure. Another question commonly debated in the Cohesion Policy literature relates to the diverging roles of national and regional authorities in ensuring policy success. Arbolino, Di Caro, & Marani (2020) show that national coordination (vs. regional coordination) of the policy is more effective in pursuing regional resilience due to better absorption rates. In fact, the quality of government is even more heterogeneous at the regional level (than across MSs or government departments within them) with the lowest level in the Less Developed Regions, which have the highest availability of funds (Accetturo, de Blasio, & Ricci, 2014).

Second, whether a project is led within a national or a sub-national governance level shapes how close the project is to local interests and how local 'demand' for public intervention is balanced

and reconciled with wider national strategies and interests. National *leadership* might facilitate a policy design closer to national strategic objectives and it might foster coordination and give less weight to local interest groups. This would result in more streamlined policy design. On the other hand, national leadership might increase distance from local interests and needs, reducing the empowerment of local stakholders and enhancing the blocking capacity of local interest groups. The final balance will ultimately depend on the institutional and administrative quality of regional governments and/or on the development of appropriate alternative institutional devices to align national leadership and local participation, empowerment and commitment. In this regard, the nature of the entities that will lead the projects is also a key design choice with significant consequences for implementation. A project can empower individuals directly (natural persons) or firms and public bodies (legal persons) that will, in turn, mobilise individuals as users or producers (of goods or services). The former might lead to more direct contacts and relationships and offer a more inclusive approach. But the latter might offer a better legal infrastructure, mobilising more professional counterparts that might speed up implementation (Culbert & McDonough, 1986).

Third, *administrative complexity*, in terms of the fragmentation of beneficiaries and separate local jurisdictions involved, shapes project implementation and its timeline. The involvement of a multiplicity of actors increases communication and coordination costs (Carley & Christie, 2017). When different beneficiaries are also located in different territories, this also involves multiple administrative contact points (municipalities, provinces, regions). The scant existing literature at the project level that has looked at industrial innovation projects funded by Cohesion Policy suggests that the involvement of multiple beneficiaries (i.e. the collaboration of multiple firms and/or universities on the same project) does not generate economies of scale, but is instead associated with lower investment and employment in the beneficiary firms (Crescenzi, de Blasio & Giua, 2020).

Finally, the procedures for the actual selection of the beneficiaries of the projects might add complications in the final stages of the multi-level governance framework discussed above (Lavagnon, Söderlund, Munro & Landoni, 2020). The selection of the beneficiaries can take place through standard open calls or negotiated procedures. Open calls offer the advantage of stimulating competition among applicant/ perspective beneficiaries, pursuing a selection process of the best targets according to a set of pre-determined selection criteria. However, the success and timeliness of these procedures are highly dependent on local capacity and congruence between the policy and local needs. Conversely, negotiated procedures are aimed at the co-creation of public interventions with the direct involvement of local stakeholders. A typical example of this is the Entrepreneurial Discovery Process (EDP) mobilised within Smart Specialization Strategies (S3). These are funded by the Commission to foster local innovation and employment through the coordination of the supply and demand sides of policy, from the very beginning of the policy design process (Foray, David, & Hall, 2011). Empirical evidence on the effects of such co-negotiated activation procedures does not yet exist. Conversely the case of the Local Economic Partnerships (LEPs) in the UK seems to offer a rather optimistic view on this approach (Fai & Tomlinson, 2019).

3. Data: learning from past experience for Next Generation EU

Given the similarities in governance structure and the partial overlap of overarching development and sustainability objectives, Cohesion Policy projects funded in Italy during the 2014−2020 period represent our testing sample to assess the factors likely to shape the probability of a timely implementation for NGEU projects. With the case of Italy it is possible to draw upon a unique

project-level database (named OpenCoesione) that combines more than 200 variables including a project description (objective, nature, category, policy area, economic sectors, etc.); a timeline (i.e. start date, expected and actual end dates); the set of entities involved (from the managing authority to the final user/beneficiary); information on activation procedures (details of the procedure within which the project originates); project location(s); financial resources allocated by the different funding sources and payments to the final user.

Based on the wide-ranging information included in the dataset we have been able to identify a subsample of projects that more closely resemble the logic and objectives of NGEU and the Recovery Plan. These projects, labelled here as NGEU-like projects, have been identified through a two-step sequential and integrated procedure. Starting from official EU documents (i.e., European Commission, 2019; 2020a; 2020g; 2020l), we identified specific textual strings describing the policy priorities that inspire the recovery and relaunch strategy of NGEU. Subsequently, we used these definitions to identify and extract from the full database of Cohesion Policy projects directly associated with these new policy priorities, on the basis of the associated expenditure categories (intervention fields). In order to increase precision, we also add a further detailed manual selection based on a keyword search of specific textual references on two variables: the title of the project, and the title of the activation procedure of the project. This supplementary step has allowed us to identify additional projects not formally classified in the expenditure categories normally associated with NGEU-like projects, but still aligned with these objectives. Table 1 lists in detail the expenditure categories according to which NGEU-like projects have been identified. It shows that among the 297,252 projects in our original full testing sample,[5] 14,242 can be identified as NGEU-like projects: 8,405 of them have been identified as a result of the selection of project expenditure categories; whereas 5,837 projects were identified via keyword search.

The selection includes projects aimed at leading the digital transition by reducing the social and geographical divide (e.g., digitalisation and innovation of firms; increasing access to e-government; e-health; the modernisation of the education system through e-learning; and, promoting universal broadband, including in peripheral regions) as well as projects aiming at leading the green transition, making the EU's economy sustainable through efficient use of resources, reducing pollution and restoring biodiversity (e.g. energy savings and decarbonisation, investing in clean products, environmentally-friendly technologies and circular economies).

4. Model of empirical analysis: when Next Generation EU comes into practice

As discussed in Section 2, a timely implementation of the projects mobilised by NGEU is a necessary (though insufficient) condition for its capacity to promote recovery where and when it is needed the most. A timely completion is a preliminary indicator of project success and impact. This is especially true for NGEU; previous experience with EU funds confirms that delays and untimely interventions are systematically associated with a lack of measurable ex-post impact. Countries where impacts are missing are often those where the absorbtion of funds is slower and more problematic (Crescenzi & Giua, 2017).

For each project in the sample, we have information on: 1. Start date; 2. Expected end date; 3. Actual end date. Based on these variables we can compute a simple measure of implementation delay (i.e. difference between expected and actual end dates). Relative delay is then computed by

[5] We refer to OpenCoesione's data updated to April 30th, 2020 and we excluded those projects with no data on the relevant variables needed for our analysis (e.g., implementation timeline).

Table 1
Identification of NGEU-like projects.

	Intervention fields	N. Projects
004	Productive investment linked to the cooperation between large enterprises and SMEs for developing information and communication technology (ICT) products and services, e-commerce and enhancing demand for ICT	1
010	Renewable energy: solar	20
012	Other renewable energy (including hydroelectric, geothermal and marine energy) and renewable energy integration (including storage, power to gas and renewable hydrogen infrastructure)	2
013	Energy efficiency renovation of public infrastructure, demonstration projects and supporting measures	271
015	Intelligent Energy Distribution Systems at medium and low voltage levels (including smart grids and ICT systems)	49
017	Household waste management (including minimisation, sorting, recycling measures)	4
021	Water management and drinking water conservation (including river basin management, water supply, specific climate change adaptation measures, district and consumer metering, charging systems and leak reduction)	1
022	Waste water treatment	6
023	Environmental measures aimed at reducing and / or avoiding greenhouse gas emissions (including treatment and storage of methane gas and composting)	66
043	Clean urban transport infrastructure and promotion (including equipment and rolling stock)	15
044	Intelligent transport systems (including the introduction of demand management, tolling systems, IT monitoring, control and information systems)	7
046	ICT: High-speed broadband network (access/local loop; >/=30 Mbps)	2
068	Energy efficiency and demonstration projects in SMEs and supporting measures	275
069	Support to environmentally-friendly production processes and resource efficiency in SMEs	10
070	Promotion of energy efficiency in large enterprises	14
078	e-Government services and applications (including e-Procurement, ICT measures supporting the reform of public administration, cyber-security, trust and privacy measures, e-Justice and e-Democracy)	74
080	e-Inclusion, e-Accessibility, e-Learning and e-Education services and applications, digital literacy	7,369
082	ICT Services and applications for SMEs (including e-Commerce, e-Business and networked business processes), living labs, web entrepreneurs and ICT start-ups)	164
085	Protection and enhancement of biodiversity, nature protection and green infrastructure	13
086	Protection, restoration and sustainable use of Natura 2000 sites	2
087	Adaptation to climate change measures and prevention and management of climate related risks e.g. erosion, fires, flooding, storms and drought, including awareness raising, civil protection and disaster management systems and infrastructures	21
089	Rehabilitation of industrial sites and contaminated land	13
090	Cycle tracks and footpaths	6
NGEU-like Projects identified by intervention field (A)		**8,405**
NGEU-like Projects identified by keywords search (B)		**5,837**
Total NGEU-like Projects (A + B)		**14,242**
Total Projects of the original full testing sample		**297,252**

Notes: Keyword search for NGEU-like Projects is based on the following selected keywords: artificial intelligence, big data, bike path/cycle, bio, blue-economy, circular economy, cleanup, climat*, cloud, cyber, depurate*, digit, ecology*, ecosist*, elettron*, emission, energy efficiency, environm*, green, habitat, health, hub, hydro/water, ICT, innov*, lab, natur*, photovoltaic, restoration, sustainab*, tecnol*, telematic, verd*, waste management.

Table 2
Classifying implementation for traditional and NGEU-like Projects.

		'Traditional' Projects	NGEU-like Projects	Total
On time	#	249,736	9,945	259,681
	%	88.24	69.83	87.36
Light delay	#	15,780	1,253	17,033
	%	5.58	8.80	5.73
Severe delay	#	17,494	3,044	20,538
	%	6.18	21.37	6.91
Total	#	283,010	14,242	297,252
	%	100.00	100.00	100.00

standardising the absolute difference between expected and actual end dates with the expected duration of the project (i.e. days of delay/expected duration).

Starting from these delay measures, projects can be classified into three categories of implementation: 1. Projects that ended within their expected duration are classified as 'On time'; 2. 'Light delay' projects are those that experienced a relative delay lower than the median relative delay experienced by the projects overall; 3. 'Severe delay' projects are those that experienced a relative delay higher than the median relative delay experienced by the projects overall. These indicators, entirely focused on the implementation timeline, have some intrinsic limitations. It would be ideal to observe the evolution of additional outcome/output indicators as well, for a more comprehensive assessment of projects' implementation. However, this is not technically possible due to the limited comparability of other more detailed indicators across project typologies.[6]

Table 2 shows how the projects have been classified in terms of timely or late implementation, and highlights a distinctive pattern for those aligned with NGEU priorities (NGEU-like projects).

Table 2 shows that NGEU-like projects experienced the most significant implementation difficulties and are more likely to accumulate severe delays. Whereas on average almost 90% of projects end on time, for NGEU-like projects this is true for less than 70%. NGEU-like projects experience more delays than their counterparts both with regards to light delays (9% vs 6%) and especially with regard to severe delays: more than 20% of NGEU-like projects end with a delay which is higher than the median delay relative to the expected duration of the project. This is more than 3 times higher than for traditional projects (6%).

This is certainly bad news for the EU: Europe needs to move in the direction of NGEU-like projects, but statistical evidence suggests that these are particularly challenging in terms of actual implementation. Thanks to the project-level data we are using and starting from the extensive empirical evidence on Cohesion Policy, we can uncover the reasons for these difficulties, revealing the characteristics systematically associated with timely implementation (a necessary – even if not sufficient – condition for impact). For this purpose, based on the literature on project management and policy evaluation discussed in Section 2, we can identify a set of project-level characteristics to model (and test empirically) the main features governing NGEU. In particular, we relate our implementation measures to the four key dimensions discussed in Section 2: 1. Governance levels involved in implementation (*Levels*); 2. Project leadership (*Leadership*); 3. Administrative complexity (*Complexity*); 4. Selection of beneficiaries/activation procedure

[6] Whereas within the EU Performance Framework outcome and output indicators are used for monitoring the advancing of the Operational Programs, they are less useful for analysing the project level: in fact, indicators of projects belonging to different OPs are not fully comparable with each other.

(*Activation*). Table A1 includes the full list and detailed description of each variable included in each category of the possible implementation bottlenecks or drivers of implementation delay.

Simple linear OLS regressions are performed in order to check the statistical association of these implementation indicators and project-level implemention delays for our sample of NGEU-like projects. The model of empirical analysis is specified as follows:

$$Delay_i = \alpha + \beta_1 Levels_i + \beta_2 Leadership_i + \beta_3 Complexity_i + \beta_4 Activation_i + \delta Controls_i + \varepsilon_i \quad (1)$$

Where

Delay are three alternative measures of project implementation delay: 1. A dummy variable taking value 1 if the implementation suffers any delay as defined above; 2. A dummy variable taking value 1 if 'Light Delays' are recorded and zero for 'On time' projects; 3. A dummy variable taking value 1 if severe delays are recorded and zero for 'On time' projects. Table 3 reports coefficients obtained when the outcome variable is 'Delays yes/no'. Tables A2 and A3 reports coefficients obtained when the outcome variables are respectively 'Light delays yes/no' (A2) and 'Severe delays yes/no' (A3).

Each set of explanatory variables (*Levels*, *Leadership*, *Complexity* and *Activation*) is included in the regressions separately (columns 1–4) and then simultaneously (column 5). All regressions also include a set of *Controls* accounting for key general features of all projects in order to ensure that our variables of interest compare projects that are as similar as possible. Control variables include dummies accounting for the sector of activity of the projects (i.e. public administration, ICT, social inclusion), the type of intervention (i.e. infrastructure vs. procurement/grant/capital contribution), the level of socio-economic disadvantage of the region where the project is implemented (a dummy variable equal to 1 for projects located in a territory belonging to 'Less Developed Regions' as classified by the European Commission) and the (log of) total amount of the project's funding.

Table 3
NGEU-like projects: bottlenecks to a timely implementation.

	Dependent variable: Delay				
	(1)	(2)	(3)	(4)	(5)
Levels					
EU	−0.249***				−0.0487
	(0.0190)				(0.0360)
Regions	0.382***				0.123***
	(0.0134)				(0.0333)
Leadership					
Centralized design		−0.412***			−0.303***
		(0.0135)			(0.0344)
People-led		−0.374***			−0.310***
		(0.0398)			(0.0380)
Complexity					
Multiple territories			0.133***		0.106***
			(0.0233)		(0.0221)
Multiple beneficiaries			0.207***		0.157***
			(0.0477)		(0.0492)

Table 3 (*Continued*)

	Dependent variable: Delay				
	(1)	(2)	(3)	(4)	(5)
Activation					
Negotiated Tenders				−0.228***	−0.204***
				(0.0237)	(0.0251)
Controls					
Public Administration/ICT/Social Inclusion	√	√	√	√	√
Procurement/Grant/Capital	√	√	√	√	√
Less Developed Regions	√	√	√	√	√
Funding amount	√	√	√	√	√
Constant	0.680***	0.943***	0.875***	0.784***	0.824***
	(0.0439)	(0.0377)	(0.0397)	(0.0391)	(0.0429)
Observations	14,193	14,194	14,194	14,194	14,193
R-squared	0.454	0.462	0.410	0.413	0.473

Notes: 48 Projects (out of 14,242) are excluded from the analysis since they cannot be associated to a certain location (i.e. projects that are implemented at the national level or involving all regions of the country, or a subsample of regions that include both Less Developed Region and More Developed Region).
Robust Standard errors in parentheses *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

The empirical results offer a very clear and consistent diagnosis of the possible implementation bottlnecks potentially faced by NGEU. Column (1) shows the results on the role of the governance *Levels* involved in the implementation of the project, with a focus on two different relevant levels: the EU and the regions. In our sample, NGEU-like projects can be funded by the EU (under the European Cohesion Policy umbrella) or they can be entirely funded by the national government through its own resources and under its national regulatory framework (i.e., through the *Fondo Sviluppo e Coesione* and *Piano Azione e Coesione*). The variable 'EU' takes value 1 if the project is part of a programme co-funded by the European Union through resources of the European Cohesion Policy (ESIF), and 0 otherwise. The 'EU' coefficient is negative and significant, suggesting that in principle projects funded and implemented under the EU framework are more likely to be completed on time vs. those (in principle subject to less stringent regulations) following national rules and funds. The significance of the coefficient is, however, not confirmed in column (5), when this aspect is assessed in a horse-race approach against all other project features. The role of the various governance *Levels* is also investigated with a second variable: a dummy taking value 1 if the project originated from a Regional Operational Programme and 0 if it instead belongs to a National Operational Programme. The positive coefficient in column (1) suggests that regional projects are almost 40% more likely to end with a delay than projects belonging to programmes administered at the national level. NGEU projects would benefit from governance coordinated by the European Union and administered, in each MS, at the national level. These results are convergent with those for the project *Leadership* in column (2). Centralised designs by the relevant central government departments can significantly reduce the probability of implementation delays. In addition, projects led by individuals (vs. public authorities/bodies or private firms) are also more likely to be completed on time. Taken together the results for the *Leadership* stage of project implementation seem to call for a strong national leadership to be directly linked to citizens intiatives and their needs with limited intermediations. A similar call for simplicity and simplification comes from the *Complexity* vari-

ables in column (3): projects with more complex governance – i.e. projects involving multiple beneficiaries and/or developed across multiple Local Labour Systems – are more likely to suffer from delays. In other words, projects with a single beneficiary (lower internal coordination costs) and/or entirely based within a single Local Labour System are more likely to be completed on time. More timely projects are concentrated within a single self-contained sub-regional functional area (Local Labour Systems are equivalent to Travel to Work Areas in the UK) where the majority of the labour force lives and works, where establishments can find locally most of the labour force needed for the implementation of the project and, more importantly, where local institutions of reference (public services, economic infrastructure and social relations) are easily identifiable and common to all parties involved in the implementation of the project. Taken together these results call for simplicity and focus of the projects. Attempts to achieve economies of scale artificially by favouring the combination of multiple beneficiaries and local units are bound to generate inefficiencies in the form of delayed project completion. Finally, the role that different types of *Activation* procedures can play is investigated in column (4). NGEU-like projects that are selected for funding via negotiated tender are less likely to experience delays vis-à-vis projects selected through open calls or direct award. Co-evolution and coordination of policy supply and demand sides can improve project approval, increasing the proportion of projects with a timely implementation. Given the importance of a timely implementation for any recovery action, negotiated selection procedures can play a key role in NGEU's success at its earliest stages. Coordination between local socio-economic actors should be strong from the very beginning, in contrast with a timeline where the policy supply side remains separated from local demand/actual users. In other words, even if the policy, especially in the case of a unique intervention like NGEU, has to address economic actors' behaviours towards pre-identified broad priorities, the policy 'practice' needs to reflect demand expressed (more or less) directly by local actors. Firms should not be in the position of adapting investment strategies in order to be able to compete for funding. Conversely, policy measures should interpret and support firms' needs, while offering their contribution to the general aim of the policy intervention. This is true not only for firms but for the economy more generally (e.g., public administration, education, health, and public services).

All the evidence discussed thus far, except for the EU involvement, is confirmed when variables are considered together in column (5).[7] Overall, the regression analysis has made it possible to depict the 'ideal' profile for NGEU projects capable of prompt implementation. The analysis has identified characteristics to be replicated (those associated with a negative coefficient, meaning lower probability of dealys) or avoided (those associated with a positive coefficient) in order to provide projects with a timely implementation (as a precondition for positive impact).

NGEU projects should be developed by the central governments of each MS in close cooperation with the EU and with the direct non-intermediated involvement of stakeholders and citizens active on the ground. Where possible, projects should be led by citizens with precise objectives and responsibilites (when beneficiaries are not personally visible and well-identified, e.g. in the case of regional public bodies, lack of commitment and of accountability can prevent success). Projects that require multiple beneficiaries to work in collaboration with each other are not recommended, and neither are projects that require the coordination of multiple territorial areas in their implementation. Collaborations between different actors and/or different jurisditctions, identified as a

[7] The only variable that turned insignificant is the one on the EU involvement: it seems that given the characteristics of the projects in terms of *Levels*, *Leadership*, *Complexity* and *Activation*, the EU involvement is no longer relevant for a timely implementation.

tool to boost networks, learning proximities and knowledge spillovers, can be fruitfully pursued at a later stage, when project implementation is already consolidated. In translating resources into projects, it is crucial to look for a perfect match between the supply and demand side of the policy: central government should engage in a fruitful direct dialogue with stakeholders from the very beginning of the policy design process. The overarching EU-wide objectives of NGEU should be kept aligned with the genuine, contemporary needs of the local economy through well-designed, centrally-managed participatory practices involving relevant stakeholders.

5. Conclusions

Current debates on Next Generation EU and its recovery potential generally concentrate on the amounts of financial resources made available by the EU, on the overaching themes of the plan and on the importance of sharing risk and new debt by all EU MSs as a first example of EU common fiscal policy. However, current scholarly and policy debates have so far failed to discuss the practical implementation of the plan and its alignment with the urgent and timely responses invoked by EU citizens. MSs are currently selecting projects with which they will translate NGEU into practical policy actions with no evidence-based guidance for their decisions. More generally the public policy literature is lacking in conceptual and empirical frameworks for the ex-ante assessment of the implementation timeline of new public interventions. This paper has addressed this fundamental gap by looking at the project-level drivers of timely implementation as a necessary (though insufficient) condition for impact.

The micro-level analysis of a large sample of projects currently funded by the EU with the same priorities and objectives of NGEU (the proposed experimental testbed) suggests that timely implementation is achieved – within the EU Commission coordination framework – when national governments liaise directly with their citizens through participatory procedures involving relevant stakeholders. Simplified implementation procedures with clear spatial targeting and limited involvement of regional and local authorities are necessary conditions for the avoidance of implementation delays.

This evidence does not mean that regional governments (or other intermediate governance bodies) should be excluded from the implementation of NGEU. On the contrary we propose a two-stage implementation approach whereby regional governments can play a very important role in the recovery strategy, after central governments have kick-started the process in a timely manner with a direct ‘alliance’ with relevant stakeholders on the ground. The initial direct implementation of NGEU should ideally be coupled with intensive capacity building programmes aimed at reinforcing administrative capacity and efficiency and introducing modern managerial practices and simplification in the regions. After the initial stage of capacity building and urgent structural reforms (at both the national and regional level), the mobilisation of stakeholders – outside the blockages of local interest groups and the rent seeking behavior of local incumbents – together with the reinforced capacity of sub-national governance bodies will ensure the smooth implementation of the second stage of the programme. Clear ex-ante conditionalities on institutional and administrative capacity (including use of e-government and simplified procedures) could regulate a differentiated access to the second stage (and the associated funds) by each regional government or municipality. This two-stage approach would reconcile a timely implementation with the strategic contribution of sub-national governments and administrative bodies to the success of NGEU.

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Annex A

Table A1
Description of projects' observable variables.

Variable name	Variable description	# Projects
Levels		
EU	=1 if the project belongs to an ESIF (European Structural and Investment Funds) Program	13,155
	=0 if the project belongs to a Nationally funded Program ('Fondo Sviluppo e Coesione' / 'Piano di Azione e Coesione' and others)	1,087
Regions	=1 if the project belongs to a Regional Operative Program	5,394
	=0 if the project belongs to a National Operative Program	8,848
Leadership		
Centralized design	=1 if the project is designed by a central authority (Ministries Departments or Presidency of Ministries)	7,570
	=0 if the project is designed by a regional or subregional authority (e.g. Provinces, Municipalities, Functional Bodies)	6,672
People-led	=1 if the implementation of the project is led by persons	140
	=0 if the implementation of the project is led by public authorities/bodies or by companies	14,102
Complexity		
Multiple beneficiaries	=1 if the project has multiple beneficiaries	95
	=0 if the project has a single beneficiary	14,147
Multiple territories	=1 if the project location involves more than one Local Labour System	535
	=0 if the project location involves a unique Local Labour System	13,707
Activation		
Negotiated Tenders	=1 if the project has been activated through a negotiated procedure	509
	=0 if the project has been activated through standard procedures (direct assignments/open calls)	13,733
Controls		
Public Administration	=1 if the project contributes to the Public Administration sector according to the CUP (Codice Unico Progetto) classification	489
	=0 if the project does not contribute to the Public Administration sector according to the CUP (Codice Unico Progetto) classification	13,753
ICT	=1 if the project contributes to the ICT sector according to the CUP (Codice Unico Progetto) classification	455
	=0 if the project does not contribute to the ICT sector according to the CUP (Codice Unico Progetto) classification	13,787
Social Inclusion	=1 if the project contributes to the Social Inclusion sector according to the CUP (Codice Unico Progetto) classification	7,877
	=0 if the project does not contribute to the Social Inclusion sector according to the CUP (Codice Unico Progetto) classification	6,365

Table A1 (*Continued*)

Variable name	Variable description	# Projects
Procurement/Grant/ Capital	=1 if the project is a procurement operation, an individual grant assignment or a capital contribution according to the CUP (Codice Unico Progetto) classification	9,674
	=0 if the project is an infrastructural intervention or a company incentive according to the CUP (Codice Unico Progetto) classification	4,568
Less Developed Regions	=1 if the project is located in a Less Developed Region as classified by the 2014−2020 EU Cohesion policy (Basilicata, Calabria, Campania, Puglia, Sicilia)	5,457
	=0 if the project is not located in a Less Developed Region as classified by the 2014−2020 EU Cohesion policy (Basilicata, Calabria, Campania, Puglia, Sicilia)	8,737
Funding amount	Log of the total cost of the project	10.410

Notes: for the Funding amount variable we reported the value of the mean of the Logaritmic transformation.

Table A2
NGEU-like projects: bottlenecks to a timely implementation (light delays).

	Dependent variable: Light Delay				
	(1)	(2)	(3)	(4)	(5)
Levels					
EU	−0.187***				−0.0274
	(0.0196)				(0.0372)
Regions	0.327***				0.119***
	(0.0135)				(0.0351)
Leadership					
Centralized design		−0.343***			−0.243***
		(0.0138)			(0.0362)
People-led		−0.347***			−0.296***
		(0.0396)			(0.0382)
Complexity					
Multiple territories			0.105***		0.0870***
			(0.0279)		(0.0267)
Multiple beneficiaries			0.134**		0.0771
			(0.0657)		(0.0672)
Activation					
Negotiated Tenders				−0.203***	−0.168***
				(0.0234)	(0.0250)
Controls					
Public Administration/ICT/Social Inclusion	√	√	√	√	√
Procurement/Grant/Capital	√	√	√	√	√
Less Developed Regions	√	√	√	√	√
Funding amount	√	√	√	√	√
Constant	0.782***	1.034***	0.999***	0.932***	0.892***
	(0.0459)	(0.0399)	(0.0417)	(0.0412)	(0.0453)

Table A2 (*Continued*)

	Dependent variable: Light Delay				
	(1)	(2)	(3)	(4)	(5)
Observations	12,940	12,941	12,941	12,941	12,940
R-squared	0.410	0.415	0.371	0.376	0.425

Notes: 48 Projects (out of 14,242) are excluded from the analysis since they cannot be associated to a certain location (i.e. projects that are implemented at the national level or involving all regions of the country, or a subsample of regions that include both Less Developed Region and More Developed Region). Projects experiencing severe delays are excluded from the analysis.
Robust Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table A3
NGEU-like projects: bottlenecks to a timely implementation (severe delays).

	Dependent variable: Severe Delay				
	(1)	(2)	(3)	(4)	(5)
Levels					
EU	−0.0639***				−0.0370
	(0.0188)				(0.0362)
Regions	0.206***				0.133***
	(0.0125)				(0.0348)
Leadership					
Centralized design		−0.203***			−0.0817**
		(0.0127)			(0.0360)
People-led		−0.295***			−0.222***
		(0.0272)			(0.0286)
Complexity					
Multiple territories			0.129***		0.152***
			(0.0303)		(0.0295)
Multiple beneficiaries			0.276***		0.240***
			(0.0620)		(0.0646)
Activation					
Negotiated Tenders				−0.208***	−0.181***
				(0.0182)	(0.0201)
Controls					
Public Administration/ICT/Social Inclusion	√	√	√	√	√
Procurement/Grant/Capital	√	√	√	√	√
Less Developed Regions	√	√	√	√	√
Funding amount	√	√	√	√	√
Constant	0.125***	0.346***	0.309***	0.249***	0.223***
	(0.0444)	(0.0406)	(0.0404)	(0.0400)	(0.0437)
Observations	11,159	11,160	11,160	11,160	11,159
R-squared	0.269	0.268	0.245	0.250	0.292

Notes: 48 Projects (out of 14,242) are excluded from the analysis since they cannot be associated to a certain location (i.e. projects that are implemented at the national level or involving all regions of the country, or a subsample of regions that include both Less Developed Region and More Developed Region). Projects experiencing light delays are excluded from the analysis.
Robust Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

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